

CURRICULUM VITAE

Thomas Keil Henthorn, M.D.
Professor and Chair
Department of Anesthesiology
University of Colorado Health Sciences Center
4200 East 9th Avenue, Campus Box B113
Denver, Colorado 80262

BIOGRAPHICAL DATA:

Date of Birth: _____

Place of Birth: _____

EDUCATION:

Undergraduate	Drake University, Bachelor of Arts, 1972
Medical School	Northwestern University Medical School, M.D., 1978

ACADEMIC APPOINTMENTS:

2001-Present	Professor and Chair, Department of Anesthesiology, University of Colorado School of Medicine, Denver, Colorado
2000-2001	Associate Professor and Chair, Department of Anesthesiology, University of Colorado School of Medicine, Denver, Colorado
1997-2000	Associate Professor, University of Colorado Health Sciences Center, Department of Anesthesiology
1997	Adjunct Associate Professor, University of Colorado Health Sciences Center, Department of Pharmaceutical Sciences
1994-1997	Associate Chairman for Research, Northwestern University Medical School, Department of Anesthesia
1993-1997	Associate Professor, Northwestern University Medical School, Department of Anesthesia
1984-1997	Associate in Clinical Pharmacology, Northwestern University Medical School
1984-1993	Assistant Professor, Associate in Clinical Pharmacology, Northwestern University Medical School, Department of Anesthesia
1983-1984	Visiting Scientist, Karolinska Institute, Department of Clinical Pharmacology, Huddinge University Hospital, Huddinge, Sweden

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CERTIFICATION: National Board of Medical Examiners, 1978
Certified as a Diplomate of the American Board of
Anesthesiologists, 1985
Certified as a Diplomate of the American Board of Clinical
Pharmacology, 1991

LICENSURE: Illinois, 1979
Colorado, 1997

TRAINING:

Northwestern University Medical School Chicago, Illinois
Resident in Anesthesiology, 7/82-6/83
Northwestern University Medical School Chicago, Illinois
Post-Doctoral Fellow in Clinical Pharmacology, 7/80-6/82
Northwestern University Medical School Chicago, Illinois
Resident in Anesthesia, 7/79-6/80
Northwestern Memorial Hospital Chicago, Illinois
Categorical Intern in Internal Medicine, 7/78-6/79

HONORS:

Parker B. Francis Investigator in Anesthesiology, 1986-1988
Association of University Anesthesiologists, 1987-
Scientific Advisory Board, 1993-96
NIH, Biomedical Research Support Advisory Committee, National Center for Research
Resources, Ad Hoc, 11/89, 11/92, 6/97
NIH, Surgery, Anesthesiology & Trauma Study Section, DRG, NIH, Ad Hoc member,
2/92, 6/99
DVA, Alcoholism and Drug Dependence Study Section, Merit Review Board, 8/92-7/95
NIH, General Medical Sciences, ZRG4, PHRA (1), Special Ad Hoc Review Groups
12/97, 3/98
NIH, General Medical Sciences, Special Ad Hoc Review Group for Post-doctoral
Training Grants, 7/99
NIH, NIDA, Special Ad Hoc Review Group 3/01

RESEARCH AND TRAINING SUPPORT:

NIH training grant 2 T32 GM07842-06, Post-doctoral training in clinical pharmacology,
7/1/80-6/30/82.

**APPEARS THIS WAY
ON ORIGINAL**

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Janssen Pharmaceutica, Protocol JRD 16,660/001, "The Clinical Evaluation of Etomidate in Total Intravenous Anesthesia," PI- _____ 80-81.

Ohio Medical Anesthetics, "The Effects of Enflurane, Isoflurane, or Halothane Anesthesia on Hepatic Blood Flow in Man." PI- _____ 1983, _____

Swedish Medical Research Council visiting scientist fellowship awarded through Fogarty International Center, National Institutes of Health, 7/1/83-6/30/84.

NIGMS Program Project Grant 2 P01 GM22371, Clinical Pharmacology of Commonly Used Drugs, 4/1/85-6/30/86, recommended direct costs _____ effort 10%, PI- _____

American Society of Anesthesiologists Research Starter Grant, "Mixing Time and the Estimation of the Initial Distribution Volume of Thiopental in Young and Old Adults," PI- _____ 2/1/86-1/31/87.

Puritan-Bennett Parker B. Francis Investigatorship in Anesthesiology, Metabolism and the Polymorphic Oxidation Phenotype, PI- _____ 1986-1988.

Stuart Pharmaceuticals Study DIP 7-531-4, "Evaluation of the Safety and Efficacy of Diprivan and Alfentanil Using the Technique of Total Intravenous Anesthesia for Intermediate Length Surgical Procedures," PI- _____ 1/88-4/89.

NIH Research Grant (R01-GM43776), "Determinants of Drug Disposition During Anesthesia," PI- _____ Total Direct Costs, 20% effort, 10% effort 1995-1999, 1/1/91-4/30/99.

NIH Program Project Grant (GM-47819), Project 4: "Effect of Pulmonary Uptake on the Pharmacokinetics and Pharmacodynamics of Fentanyl Analogs, PI-Thomas K. Henthorn, M.D., "Adult and Pediatric Clinical Pharmacology," PI- _____ Total Direct Costs, 20% Effort, 8/1/92-7/31/95

NIH Research Grant (R01-GM47502), "Pulmonary Uptake and Kinetics of IV Anesthetics," PI-Thomas K. Henthorn, M.D., 9/1/99-8/31/03, 40% Effort, Total Costs, _____

PROFESIONAL SOCIETIES:

American Society of Anesthesiologists
Chicago Society of Anesthesiologists
Illinois Society of Anesthesiologists

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International Anesthesia Research Society
American Society for Clinical Pharmacology and Therapeutics
Association of University Anesthesiologists
Society for Intravenous Anesthesia
International Liver Transplantation Society
Society of Academic Anesthesiology Chairs
Association of Anesthesiology Program Directors

EDITORIAL SERVICE:

Editorial Board - Clinical Pharmacology and Therapeutics, 1986-
Editorial Board - Anesthesiology, 2000-
Editorial Board - Quarterly Review of Anaesthetic Pharmacology, 1992-97
Reviewer -- Anesthesiology
Reviewer -- Journal of Pharmacology and Experimental Therapeutics
Reviewer -- Journal of Pharmaceutical Sciences
Reviewer -- Journal of Applied Physiology
Reviewer -- American Journal of Physiology

COMMITTEES:

National:

American Society of Anesthesiologists Committee on Drug Disposition and Anesthetic Action 1991 - 1999
Association of University Anesthesiologists Scientific Advisory Board 1992-1995
Specification Committee - SAAM II kinetic analysis program Resource Facility for Kinetic Analysis, University of Washington, Seattle, WA, 1993-98
USP, Advisory Board 1995-

University:

Northwestern University, Animal Care and Use Committee, 1988-91, 1995-96
Northwestern University, Medical School Intramural Research Committee, 1992-1995
Northwestern University, Medical School Research Council, 1994-97
Northwestern University, Medical School Search Committee for Department of Anesthesia Chairman, 1994-1995

University of Colorado Medical School, Executive Committee, 2000-
University Physicians Incorporated, Board of Directors, 2000-

Hospital:

Northwestern Memorial Hospital, Pharmacy and Therapeutics Committee, 1981-83, 1984-97
Northwestern Memorial Hospital, Pharmacy and Therapeutics Committee, Therapeutics Subcommittee, 1994-97
University of Colorado Hospital, Denver, Pharmacy and Therapeutics Committee, 1998-2000

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University of Colorado Hospital, Denver, Medical Board, 2000-

Departmental:

Northwestern University

Department of Anesthesia, Research Committee, 1984-97

Department of Anesthesia, Residency Selection Committee, 1986-97

Department of Anesthesia, Search Committee for new Biomedical Engineering Faculty
Member, 1991-92

Department of Anesthesia, Visiting Professor Committee, 1984-97, Chairman, 1989 -96

UCHSC

Department of Anesthesiology, Research Committee, 1997- (Director of research since
12/98)

Department of Anesthesiology, Promotion and Tenure Committee (chair), 1998-2000

Department of Anesthesiology, Education Committee, 1999-

Department of Anesthesiology, Residency Selection Committee, 1999-

SPECIAL QUALIFICATIONS:

Instructor, Advanced Cardiac Life Support, American Heart Association, 1982

Certified as a Diplomate of the American Board of Anesthesiologists, 1985

Associate Examiner, American Board of Anesthesiologists, 1987-90

Certified as a Diplomate of the American Board of Clinical Pharmacology, 1991

BIBLIOGRAPHY

ORIGINAL CONTRIBUTIONS

1. Stec GP, Greenberger P, Ruo TI, Henthorn T, Morita Y, Atkinson AJ, Jr., Patterson R: Kinetics of theophylline transfer into breast milk. Clin Pharmacol Ther 28:404-408, 1980.
2. Ruo TI, Morita Y, Atkinson AJ, Jr., Henthorn T, Thenot J-P: Identification of desethyl procainamide in patients: A new metabolite of procainamide. J Pharmacol Exp Ther 216:357-362, 1981.
3. Eudeikis JR, Henthorn TK, Lertora JJJ, Atkinson AJ, Jr., Chao GC, Kushner W: Kinetic analysis of the vasodilator and ganglionic blocking actions of N-acetylprocainamide. J Cardiovasc Pharmacol 4:303-309, 1982.
4. Shanks CA, Funk DI, Avram MJ, Henthorn TK: Gallamine administered by combined bolus and infusion. Anesth Analg 61:847-852, 1982.
5. Henthorn TK, Avram MJ, Fredericksen MC, Atkinson AJ, Jr.: Heterogeneity of interstitial fluid space demonstrated by simultaneous kinetic analysis of the distribution and elimination of inulin and gallamine. J Pharmacol Exp Ther 222:389-394, 1982.

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6. Fredericksen MC, Henthorn TK, Ruo TI, Atkinson AJ, Jr.: Pharmacokinetics of pentobarbital in the dog. *J Pharmacol Exp Ther* 225:355-360, 1983.
7. Fragen RJ, Avram MJ, Henthorn TK, Caldwell NJ: A pharmacokinetically designed etomidate infusion regimen for hypnosis. *Anesth Analg* 62:654-660, 1983.
8. Fredericksen MC, Bowsher DJ, Ruo TI, Henthorn TK, Ts'ao C-H, Green D, Atkinson AJ, Jr.: Kinetics of epsilon-aminocaproic acid distribution, elimination and antifibrinolytic effects in normal subjects. *Clin Pharmacol Ther* 35:387-393, 1984.
9. Atkinson AJ, Jr., Henthorn TK: Thiopental anesthesia in the elderly. *Anesthesiology* 62:706-707, 1985 (editorial).
10. Spina E, Henthorn TK, Eleborg L, Nordin C, Sawe J: Desmethylinipramine overdose: Nonlinear kinetics in a slow hydroxylator. *Ther Drug Mon* 7:239- 241, 1985.
11. von Bahr C, Spina E, Birgersson C, Ericsson O, Goransson M, Henthorn T, Sjoqvist F: Inhibition of desmethylinipramine 2-hydroxylation by drugs in human liver microsomes. *Biochem Pharmacol* 34:2501-2505, 1985.
12. Avram MJ, Henthorn TK, Shanks CA, Krejcie TC: The initial rate of change in distribution volume is the sum of intercompartmental clearances. *J Pharm Sci* 75:919-920, 1986.
13. Avram MJ, Shanks CA, Henthorn TK, Ronai AK, Kinzer J, Wilkinson CJ: Metocurine kinetics in patients undergoing operations requiring cardiopulmonary bypass. *Clin Pharmacol Ther* 42:576-581, 1987.
14. Katz JA, Kaeding CS, Hill JR, Henthorn TK: The pharmacokinetics of bupivacaine when injected intra-articularly after knee arthroscopy. *Anesth Analg* 67:872-875, 1988.
15. Ambre JJ, Connelly TJ, Ruo TI, Henthorn TK: Induction and loss of acute tolerance to the cardiac chronotropic effect of cocaine in humans. *NIDA Res Monogr* 95:355-356, 1989.
16. Henthorn TK, Avram MJ, Krejcie TC: Intravascular mixing and drug distribution: The concurrent disposition of thiopental and indocyanine green. *Clin Pharmacol Ther* 45:56-65, 1989.
17. Henthorn TK, Spina E, Dumont E, von Bahr C: In vitro inhibition of a polymorphic human liver P-450 isozyme by narcotic analgesics. *Anesthesiology* 70:339-342, 1989.

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18. Henthorn TK, Benitez J, Avram MJ, Martinez C, Llerena A, Cobaleda J, Krejcie TC, Gibbons RD: Assessment of the debrisoquin and dextromethorphan phenotyping tests by Gaussian mixture distributions analysis. *Clin Pharmacol Ther* 45:328-333, 1989.
19. Bertilsson L, Henthorn TK, Sanz E, Tybring G, Sawe J, Villen T: Importance of genetic factors in the regulation of diazepam metabolism: Relationship to *s*-mephenytoin, but not debrisoquin hydroxylation phenotype. *Clin Pharmacol Ther* 45:348-355, 1989.
20. Henthorn TK, Avram MJ, Krejcie TC: Alfentanil clearance is independent of the polymorphic debrisoquin hydroxylase. *Anesthesiology* 71:635-639, 1989.
21. Avram MJ, Krejcie TC, Henthorn TK: The relationship of age to the pharmacokinetics of early drug distribution: Concurrent disposition of thiopental and indocyanine green. *Anesthesiology* 72:403-411, 1990.
22. Henthorn TK, Avram MJ, Krejcie TC, Shanks CA, Asada A, Kaczynski DA: A minimal compartmental model of circulatory mixing of indocyanine green. *Am J Physiol* 262:H903-H910, 1992.
23. Ambre JJ, Connelly TJ, Ruo TI, Henthorn TK: Acute tolerance to the chronotropic effect of cocaine in humans. *NIDA Res Monogr* 108:41-54, 1992.
24. Henthorn TK, Krejcie TC, Avram MJ: The relationship between alfentanil distribution kinetics and cardiac output. *Clin Pharmacol Ther* 52:190-196, 1992.
25. Henthorn TK, Krejcie TC, Shanks CA, Avram MJ: Time-dependent distribution volume and kinetics of the pharmacodynamic effector site. *J Pharm Sci* 81:1136-1138, 1992.
26. Avram MJ, Sanghvi R, Henthorn TK, Krejcie TC, Shanks CA, Fragen RJ, Howard KA, Kaczynski DA: Determinants of thiopental induction dose requirements. *Anesth Analg* 76:10-17, 1993.
27. Shanks CA, Avram MJ, Krejcie TC, Henthorn TK, Gentry WB: A pharmacokinetic-pharmacodynamic model for quantal responses with thiopental. *J Pharmacokinet Biopharm* 21:309-321, 1993.
28. Krejcie TC, Henthorn TK, Shanks CA, Avram MJ: A recirculatory pharmacokinetic model describing the circulatory mixing, tissue distribution and elimination of antipyrine in dogs. *J Pharmacol Exp Ther* 269:609-616, 1994.
29. Gentry WB, Krejcie TC, Henthorn TK, Shanks CA, Howard KA, Gupta DK, Avram MJ: Infusion rate-related dose-response relationship: Assessment of a pharmacokinetic-pharmacodynamic model. *Anesthesiology* 81:316-324, 1994.

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30. Shanks CA, Avram MJ, Krejcie TC, Henthorn TK: Calculation of an effect compartment rate constant using recovery indices obtained with an isolated arm. *Br J Anaesth* 75:109-112, 1995.
31. Gentry WB, Krejcie TC, Henthorn TK, Avram MJ: Canine total intravenous anesthesia with methohexital. *Am J Vet Res* 57:1044-1049, 1996.
32. Krejcie TC, Henthorn TK, Niemann CU, Klein C, Gupta DK, Gentry WB, Shanks CA, Avram MJ: Recirculatory pharmacokinetic models of markers of blood, extracellular fluid, and total body water administered concomitantly. *J Pharmacol Exp Ther* 278:1050-1057, 1996.
32. Krejcie TC, Niemann CU, Avram MJ, Jacquez JA, Shanks CA, Henthorn TK: Use of parallel Erlang density functions to analyse first-pass pulmonary uptake of multiple indicators in dogs. *J Pharmacokinet Biopharm* 24:569-588, 1996.
33. O'Hara DA, Hexem JG, Derbyshire GJ, Overdyk FJ, Chen B, Henthorn TK, Li K-J: The use of a PID controller to model vecuronium pharmacokinetics and pharmacodynamics during liver transplantation. *IEEE Trans Biomed Eng* 44:610-619, 1997.
34. Birmingham PK, Tobin MJ, Henthorn TK, Berkelhamer MC, Smith FA, Fanta KB, Côté CJ: 24 hour pharmacokinetics of rectal acetaminophen in children: an old drug with new recommendations. *Anesthesiology* 87:244-252, 1997
35. Krejcie TC, Avram MJ, Gentry WB, Niemann CU, Janowski MP, Henthorn TK: A recirculatory model of the pulmonary uptake and pharmacokinetics of lidocaine based on analysis of arterial and mixed venous data from dogs. *J Pharmacokinet Biopharm* 25:169-90, 1997.
36. Avram MJ, Krejcie TC, Niemann CU, Klein C, Gentry WB, Shanks CA, Henthorn TK: The effect of halothane on the recirculatory pharmacokinetics of physiologic markers. *Anesthesiology* 87:1381-93, 1997.
37. Dsida RM, Wheeler M, Birmingham PK, Henthorn TK, Avram MJ, Enders-Klein C, Maddalozzo J, Cote CJ: Premedication of pediatric tonsillectomy patients with oral transmucosal fentanyl citrate. *Anesth Analg* 86:66-70, 1998.
38. Waters CM, Avram MJ, Krejcie TC, Henthorn TK: Uptake of fentanyl in pulmonary endothelium. *J Pharmacol Exp Ther* 288:157-63, 1999.
39. Kaplan B, Wang Z, Siddohom O, Henthorn TK, Mujais SK: Evaluation of urea kinetics utilizing stable isotope urea and pharmacokinetic modeling. *Artif Organs* 23:44-50, 1999.

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40. Henthorn TK, Liu Y, Mahapatro M, Ng KY: Active transport of fentanyl by the blood-brain barrier. *J Pharmacol Exp Ther* 289:1084-89, 1999.
41. Henthorn TK, Krejcie TC, Niemann CU, Klein C, Shanks CA, Avram MJ: Ketamine distribution described by a recirculatory pharmacokinetic model is not stereoselective. *Anesthesiology* 91:1733-43, 1999.
42. Gonzalez R, Ebbinghaus S, Henthorn TK, Miller D, Kraft AS: Treatment of patients with metastatic melanoma with bryostatins-1 – a phase II study. *Melanoma Res* 9:599-606, 1999.
43. Mandell MS, Henthorn T: Fibrinolysis in patients with fulminant hepatic failure. *Liver Transpl Surg* 5:464, 1999.
44. Krejcie TC, Henthorn TK, Gentry WB, Niemann CU, Enders-Klein C, Shanks CA, Avram MJ: Modifications of blood volume alter the disposition of markers of blood volume, extracellular fluid, and total body water. *J Pharmacol Exp Ther*, 291:1308-16, 1999.
45. Avram MJ, Krejcie TC, Niemann CU, Enders-Klein C, Shanks CA, Henthorn TK: The effect of isoflurane on the recirculatory pharmacokinetics of physiological markers. *Anesthesiology*, 92(6):1757-68, 2000.
46. Niemann CU, Henthorn TK, Krejcie TC, Shanks CA, Enders-Klein C, Avram MJ: Indocyanine green kinetics characterize blood volume and flow distribution and their alteration by propranolol. *Clin Pharmacol Ther* 67:342-50, 2000.
47. Birmingham PK, Tobin MJ, Fisher DM, Henthorn TK, Hall SC, Coté CS: Initial and subsequent dosing of rectal acetaminophen in children: A 24-hour pharmacokinetic study of new dose recommendations. *Anesthesiology* (in press).
48. Ng KY, Yan XD, Lui Y, Henthorn TK: Substrate Specificity of the Fentanyl Blood-Brain Barrier Transporter. *Anesthesiology*, (submitted).
49. Minto CF, Schider TW, Gregg KM, Henthorn TK, Shafer SL: Using the maximum effect site concentration to combine pharmacokinetics and pharmacodynamics. *J Pharmacokinetic Biopharm* (submitted).
50. Cho CW, Liu Y, Yan X^{1,2}, Henthorn TK, Ng KY: Carrier-mediated uptake of rhodamine 123: implications on its use for mdx research. *Pharm Res* (submitted).

ABSTRACTS:

1. Eudeikis JR, Henthorn TK, Lertora JJJ, Atkinson AJ, Jr., Chao GC, Kushner W: Kinetic analyses of the vasodilator and ganglionic blocking actions of N-

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- acetylprocainamide. Annual Meeting of the Central Society for Clinical Research, Chicago, IL, 1981.
2. McDonnell TE, Bartowski RR, Bonilla FA, Henthorn TK, Williams JJ: Nonuniformity of alfentanil pharmacokinetics in healthy adults. Annual meeting of the American Society of Anesthesiologists, Las Vegas, NV, 1982. *Anesthesiology* 57:A236, 1982.
 3. Shanks CA, Funk DI, Avram MJ, Henthorn TK: Gallamine administered by combined I.V. bolus and infusion. Annual General Meeting of the Australian Society of Anaesthetists, 1981. *Anaesth Int Care* 10:72, 1982.
 4. Fredericksen MC, Green D, Bowsher DJ, Ruo TI, Henthorn TK, Ts'ao C, Atkinson AJ, Jr.: Pharmacokinetics of epsilon-aminocaproic acid (EACA) in normal subjects. IXth International Congress on Thrombosis and Haemostasis, Stockholm, Sweden, 1983. *Thrombosis and Haemostasis* 50:301, 1983.
 5. Bowsher DJ, Fredericksen MC, Ruo TI, Henthorn TK, Ts'ao C, Green D, Atkinson AJ, Jr.: Pharmacokinetics and effect kinetics of epsilon-aminocaproic acid. Annual Meeting of the Central Society for Clinical Research, Chicago, IL, 1983.
 6. Henthorn TK, Spina E, Birgersson C, Ericsson O, von Bahr C: In vitro competitive inhibition of desipramine hydroxylation by alfentanil and fentanyl in human liver microsomes. *Anesthesiology* 63:A305, 1985.
 7. Henthorn TK, Tybring G, Sawe J, Bertilsson L: Relationship between debrisoquin hydroxylation and plasma kinetics of diazepam, desmethyldiazepam and oxazepam. *Acta Pharmacol Toxicol* 59:114, 1986.
 8. Henthorn TK, Spina E, Dumont E: In vitro evidence of a genetic factor accounting for slow elimination clearance of some narcotics. Annual Meeting of the Association of University Anesthetists, Portland, OR, 1987.
 9. Henthorn TK, Krejcie TC, Avram MJ: Age and intravascular mixing during induction with thiopental. *Anesthesiology* 67:A663, 1987.
 10. Krejcie TC, Henthorn TK, Avram MJ, Morton DL: Thiopental kinetics and age: A reassessment. *Anesthesiology* 67:A664, 1987.
 11. Katz JA, Kaeding CS, Hill JR, Henthorn TK: The pharmacokinetics of bupivacaine when injected intra-articularly following knee arthroscopy. Annual Meeting of the American Society of Regional Anesthesia, San Francisco, CA, 1987.
 12. Henthorn TK, Avram MJ, Krejcie TC: Simultaneous kinetic modelling of thiopental and indocyanine green. Annual Meeting of the Resource Facility for Kinetic Analysis, Seattle, WA, 1987.

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13. Avram MJ, Henthorn TK, Krejcie TC: Thiopental disposition, intravascular mixing, and age. Ninth World Congress of Anaesthesiologists, Washington, DC, 1988.
14. Avram MJ, Henthorn TK, Krejcie TC, Benitez J, Gibbons RD, Llerena A, Martinez C, Cobaleda J: The dextromethorphan phenotyping test accurately predicts debrisoquin hydroxylase phenotype. *Anesthesiology* 69:A422, 1988.
15. Henthorn TK, Avram MJ, Krejcie TC: Alfentanil clearance is independent of the polymorphic debrisoquin hydroxylase phenotype. *Anesthesiology* 69:A464, 1988.
16. Krejcie TC, Henthorn TK, Avram MJ: Alfentanil pharmacokinetics: Intravascular space and cardiac output. *Anesthesiology* 69:A466, 1988.
17. Henthorn TK, Avram MJ, Krejcie TC, Shanks CA: A delayed drug return to the central compartment explains oscillation in the thiopental concentration-time curve. Annual Meeting of the Association of University Anesthetists, Rochester, MN, 1989.
18. Ambre JJ, Connelly TJ, Ruo TI, Henthorn TK: Induction and loss of acute tolerance to the cardiac chronotropic effect of cocaine in humans. Annual Scientific Meeting Committee on Problems of Drug Dependence (CPDD) Keystone, CO, 1989.
19. Henthorn TK, Avram MJ, Krejcie TC, Shanks CA: A circulatory lag model for an oscillation in the thiopental concentration-time curve. *Eur J Clin Pharmacol* 36:A182, 1989.
20. Krejcie TC, Henthorn TK, Wheeler M, Avram MJ: Modelling non-stationary pharmacokinetics during canine methohexital anesthesia. *Anesthesiology* 71:A257, 1989.
21. Henthorn TK, Avram MJ, Krejcie TC, Shanks CA: A delayed return to the central compartment explains oscillation in the thiopental concentration-time curve. *Anesthesiology* 71:A258, 1989.
22. Martinez C, Henthorn TK, Avram MJ, Llerena A, Cobaleda J, Krejcie TC, Benitez J: Interacciones genetico-ambientes en metabolismo de debrisoquina y dextrometorphano. *Rev Farm Clin Exp* 6:276, 1989.
23. Henthorn TK, Krejcie TC, Shanks CA, Kaczynski DA, Asada A, Avram MJ: A discontinuous indocyanine green (ICG) kinetic model. *Clin Pharmacol Ther* 47:149, 1990.
24. Fragen RJ, Avram MJ, Henthorn TK, Asada A, Pemberton D, Correll T: Total intravenous anesthesia with propofol, alfentanil and vecuronium for superficial surgery. *Anesth Analg* 70:S112, 1990.

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25. Krejcie TC, Henthorn TK, Shanks CA, Asada A, Avram MJ: The intravascular disposition of indocyanine green (ICG) from the moment of its administration. *Anesthesiology* 73:A380, 1990.
26. Shanks CA, Henthorn TK, Asada A, Krejcie TC, Avram MJ: A pharmacokinetic model characterizing antipyrine disposition from the moment of its administration. *Anesthesiology* 73:A377, 1990.
27. Sanghvi R, Henthorn TK, Krejcie TC, Shanks CA, Fragen RJ, Howard K, Kasczynski D, Avram MJ: Patient characteristics associated with the thiopental doses at clinical and EEG induction endpoints. *Clin Pharmacol Ther* 49:164, 1991.
28. Avram MJ, Sanghvi R, Henthorn TK, Fragen RJ, Asada A, Pemberton D, Correll T, Minienka I: The pharmacokinetics of alfentanil administered by multiple bolus and continuous infusion in the presence of either nitrous oxide or propofol. *Anesthesiology* 75:A320, 1991.
29. Krejcie TC, Sanghvi R, Henthorn TK, Shanks CA, Fragen RJ, Howard K, Kaczenski D, Avram MJ: Patient characteristics included in models for thiopental doses at clinical and EEG induction endpoints. *Anesthesiology* 77:A450, 1992.
30. Henthorn TK, Krejcie TC, Gupta DK, Shanks CA, Gentry WB, Avram MJ: Recirculatory kinetics of ICG, inulin and antipyrine. *Clin Pharmacol Ther* 53:217, 1993.
31. Gentry WB, Krejcie, Henthorn TK, Howard KA, Gupta DK, Shanks CA, Avram MJ: Thiopental dose requirements with different rates of infusion. *Clin Pharmacol Ther* 53:217, 1993.
32. Gentry WB, Krejcie, Henthorn TK, Shanks CA, Avram MJ: Thiopental dose requirements with different rates of infusion. Presented at the 1993 Annual Meeting of the Association of University Anesthesiologists in Winston-Salem, N.C.
33. Avram MJ, Krejcie TC, Shanks CA, Gentry WB, Janowski MP, Henthorn TK: The effect of halothane anesthesia on drug disposition from the moment of injection. *Anesthesiology* 79:A337, 1993.
34. Gentry WB, Henthorn TK, Krejcie TC, Gupta DK, Shanks CA, Avram MJ: Recirculatory kinetics of markers of blood, interstitial fluid, and total body water administered concomitantly. *Anesthesiology* 79: A338, 1993.
35. Gentry WB, Krejcie TC, Henthorn TK, Shanks CA, Gupta DK, Avram MJ: Infusion rate-related thiopental dose-response: Application of a kinetic-dynamic model. *Anesthesiology* 79:A339, 1993.

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36. Henthorn TK, Krejcie TC, Gentry WB, Gupta DK, Avram MJ: Inclusion of pulmonary uptake in a recirculatory model of lidocaine. *Anesthesiology* 79:A340, 1993.
37. Krejcie TC, Henthorn TK, Gentry WB, Tulloch JM, Enders CL, Avram MJ: The concordance of the early distribution kinetics of antipyrine and thiopental. *Anesthesiology* 79:A341, 1993.
38. Shanks CA, Avram MJ, Krejcie TC, Henthorn TK, Gentry WB: A kinetic- dynamic model for quantal responses with thiopental. *Anesthesiology* 79:A342, 1993.
39. Shanks CA, Avram MJ, Krejcie TC, Gentry WB, Henthorn TK: Calculation of the effect compartment rate constant, k_{eo} , using recovery indices with the isolated arm technique. Presented at the 1994 annual meeting of the Association of University Anesthesiologists in Chicago.
40. Krejcie TC, Henthorn TK, Gentry WB, Shanks CA, Avram MJ: The effect of altered blood volume on intravascular mixing. Presented at the 1994 annual meeting of the Association of University Anesthesiologists in Chicago.
41. Krejcie TC, Henthorn TK, Gentry WB, Shanks CA, Enders C, Van Drie J, Avram MJ: The effect of altered blood volume on intravascular mixing. *Anesthesiology* 81(3A):A410, 1994.
42. Henthorn TK, Krejcie TC, Gentry WB, Avram MJ: The pulmonary uptake of alfentanil and fentanyl defined in a recirculatory model. *Anesthesiology* 81(3A):A411, 1994.
43. Henthorn TK, Niemann CU, Krejcie TC, Avram, MJ: Comparison of first pass lidocaine pulmonary pharmacokinetics with one versus two parallel pulmonary circuits. *Anesthesiology* 83:A366, 1995.
44. Krejcie TC, Henthorn TK, Niemann CU, Shanks CA, Klein C, Lane M, Avram MJ: Recirculatory pharmacokinetics of indocyanine green, a marker of intravascular space, in man. *Anesthesiology* 83:A371, 1995.
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60. Krejcie TC, Henthorn TK, Niemann NU, Klein C, Shanks CA, Avram MJ: The effect of isoflurane on drug disposition from the moment of injection. *Anesthesiology* A520, 1998.
61. Henthorn TK, Liu Y, Ng KY: Evidence for a fentanyl transporter at the blood-brain barrier. *Anesthesiology* A522, 1998.
62. Henthorn TK, Krejcie TC, Niemann CU, Enders-Klein C, Avram MJ: Ketamine Distribution Pharmacokinetics Are Not Stereoselective. *Anesthesiology* A346, 1999.
63. Henthorn TK, Mandel S: Noninvasive Estimation of the Recirculatory Pharmacokinetics of a Marker of the Intravascular Space during Liver Transplantation. *Anesthesiology* 93:A524, 2000.
64. Henthorn TK, Yan X, Ng L: Evidence That the Fentanyl Blood-Brain-Barrier Transporter Is pKa-Specific. *Anesthesiology* 93:A525, 2000

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BOOK CHAPTERS:

1. Henthorn TK, Avram MJ: Pharmacologic principles. In *Introduction to Anesthesia: The Principles of Safe Practice*. Dripps RD, Eckenhoff JE, Vandam LD (Eds.). Philadelphia, WB Saunders, 1987.
2. Henthorn TK, Krejcie TC: Postoperative pain management. In *Handbook of Chronic Pain Management*. Tollison CD (Ed.). Baltimore, Williams and Wilkins, 1988.
3. Avram MJ, Henthorn TK: What's new in pharmacokinetics and pharmacodynamics. In *Anesthesiology Clinics of North America*, Vol. 6, No. 2. New Anesthetic Drugs. Fragen RJ (Ed.). Philadelphia, WB Saunders, 1988.
4. Henthorn TK, Avram MJ: Pharmacokinetics and pharmacodynamics of drug response. *Current Opinion in Anaesthesiology* 3(4):529-537, 1990.
5. Henthorn TK: Opioid infusions. In *Drug Infusions in Anesthesiology*. Fragen RJ (Ed.). New York, Raven Press, 1991, pp. 85-105.
6. Henthorn TK, Avram MJ: Pharmacokinetics and pharmacodynamics. In *Kinetics of Anaesthetic Drugs*, Edited by White PF. Bailliere's Clinical Anaesthesiology, London, Bailliere Tindall, 1991.
7. Henthorn TK: Pharmacokinetic of intravenous induction agents. In *The Pharmacological Basis of Anesthesiology: Basic Science and Clinical Application*, Edited by Bowdle TA, Horita A, Kharasch ED. New York, Churchill Livingstone, 1994.
8. Henthorn TK: Emerging concepts in pharmacokinetics. In Henthorn TK: Opioid infusions. In *Drug Infusions in Anesthesiology*. Fragen RJ (Ed.). New York, Raven Press, 1991, pp. 85-105., Edited by Bowdle TA, Horita A, Kharasch ED. New York, Churchill Livingstone, 1994.
9. Editor (and editorialist): α 2-agonist issue: *Anaesthetic Pharmacology Review* 1:220-315, 1993.
10. Henthorn TK: Opioid infusions. In *Drug Infusions in Anesthesiology* (Second Edition). Fragen RJ (Ed.). New York, Raven Press, 1996, pp. 103-125.
11. Gentry WB, Henthorn TK. Barbiturates. In *Textbook of Intravenous Anesthesia*. White PF (Ed.). Philadelphia, Williams and Wilkins, 1997, pp. 65-76.

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PUBLISHED SYMPOSIA PROCEEDINGS AND NON-REFEREED PAPERS:

1. Avram MJ, Henthorn TK, Krejcie TC: Assay for serum sufentanil level is not sensitive (letter). *Anesthesiology* 65:110-111, 1986.
2. Vinik HR, Anton KE, Barbarash RA, Fuller FW, Henthorn TK, et al.: Patient-controlled analgesia in hospitalized patients: A multicenter evaluation. *Postgraduate Medicine Suppl.* pp. 41-45, Aug. 28, 1986.
3. Henthorn TK: Narcotic analgesics and debrisoquin polymorphism (letter). *Anesthesiology* 71:475, 1989.
4. Henthorn TK: Mixture distribution in pharmacologic research. *Rev Farm Clin Exp*, 6:169-171, 1989.
5. Henthorn TK, Gupta DK: Association of University Anesthesiologists Satellite Symposium: Pharmacokinetics and Pharmacodynamics. Lake Bluff, Illinois, May 3-5, 1994. Report of a scientific meeting. *Anesthesiology* 81:1556-7, 1994.
6. Henthorn TK, Krejcie TC, Avram MJ, Jensen TR, Waters CM: Transporter-mediated pulmonary endothelial uptake of fentanyl. *Int J Clin Pharmacol Ther* 36:74-5, 1998.

INVITED LECTURES (selected)

Visiting Professor (since 1987):

Stanford

University of Texas, Houston

Vanderbilt University

UMDNJ - Robert Wood Johnson Medical School

University of Chicago

Rush University Medical School

University of Rochester

Massachusetts General Hospital of Harvard Medical School

University of Illinois

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Columbia University

University of Washington

"Gaussian Mixture Distributions in Pharmacologic Research," presented at the 14th annual meeting of the Pharmacological Society of Spain, Badajoz, Spain, September 1989.

"Polymorphic Drug Metabolism and Anesthesia," - Workshop on Perioperative Factors Affecting Drug Disposition. 1990 annual meeting of the American Society of Anesthesiologists, Las Vegas, 1990.

"Pharmacology of Anesthetics and Analgesics" - Clinical Pharmacology Review Course at the 1994 annual meeting of the American Society for Clinical Pharmacology and Therapeutics, New Orleans, March 1994.

"Emerging Concepts in Pharmacokinetics and Pharmacodynamics" and "Pharmacokinetics of Intravenous Anesthetics," presented at the UCSD Anesthesiology Review Course, San Diego, May 1994.

Host and organizer of the Association of University Anesthesiologists' Satellite Symposium on "Pharmacokinetics and Pharmacodynamics" Lake Bluff, IL, May, 1994.

"A Kinetic Approach for the Understanding of the Physiologic Basis of the Redistribution of Thiopental and Other Drugs," presented at the 16th annual meeting of the Japanese Society of Anesthetic Toxicology and Metabolism, Osaka, November 1994.

"Pharmacokinetics" - 4 hours of lecture as part of the 2nd year Pharmacology Course, Harvard Medical School, Boston, MA, February 1995.

"Pharmacokinetics: Putting Theory into Practice" - Annual meeting of the Society of Intravenous Anesthesia, Atlanta, October, 1995.

"What Governs the Onset of Drug Effect?" - Panel on The New Clinical Pharmacology. 1996 annual meeting of the American Society of Anesthesiologists, New Orleans, 1996.

"Endothelial Transport of Lipophilic Drugs" - University of Extremadura, Badajoz, Spain, December, 1998.

"Total Intravenous Anesthesia" – CRASH, Vail, Colorado, UCHSC, 1999.

"Recirculatory pharmacokinetics. Which physiological covariates affect the pharmacokinetics of IV agents?" Panel on "An update on PK/PD modeling" annual meeting of the European Society for Intravenous Anesthesia. April, 2001.